

# SCIENCE IN CHINA

## (SCIENTIA SINICA)

Series A

### SUBJECT INDEX TO VOLUME 35 (1992)

#### Mathematics

- Pseudospectral-Difference Method for Baroclinic Primitive Equation and Its Error Estimation.....  
.....*GUO Ben-yu et al.* ( 1 )
- Tricomi Problem for Nonlinear Equation of Mixed Type .....  
.....*SUN He-sheng* ( 14 )
- P/R Nets and Process Concepts (I) .....*LU Ru-qian* ( 21 )
- Necessary and Sufficient Condition of Strong Chaos on SelfMapping of Subshift of Finite Type .....  
.....*YU Bo-hua* ( 32 )
- $n$ -Widths of Some Classes of Periodic Functions .....  
.....*CHEN Di-rong* ( 42 )
- Multipliers on Real Hardy Spaces.....  
.....*LIU Zhi-xin* ( 55 )
- Global Solution, Asymptotic Behavior and Blow-up Problems for a Model of Nuclear Reactors .....  
.....*WANG Ming-xin* ( 129 )
- On the Tricomi Problem of Infinitesimal Deformation Equation for Surfaces With Mixed Curvature  
(II)  
—— Existence of Solution .....  
.....*SUN He-sheng* ( 142 )
- P/R Nets and Process Concepts (II) .....  
.....*LU Ru-qian* ( 148 )
- Atomic Decomposition for Weighted  $H^p$  Spaces on Product Domains .....  
.....*ZHU Xue-xian* ( 158 )
- Reduction of Unknowns in Diophantine Representations.....  
.....*SUN Zhi-wei* ( 257 )
- Maximal Period Polynomials Over  $Z/(p^d)$  .....  
.....*HUANG Min-qiang* ( 270 )
- Essential Spectrum of Complete Riemannian Manifolds .....  
.....*CHEN Zhi-hua et al.* ( 276 )
- Embeddings of Simple Triple Systems .....*SHEN Hao* ( 283 )
- Diffusion Processes on Principal Bundles and Differential Operators on the Associated Bundles .....  
.....*WANG Zheng-dong et al.* ( 385 )
- Boundedness for Solutions of Superlinear Duffing Equations via the Twist Theorem .....  
.....*YOU Jian-gong* ( 399 )

Central Limit Theorem for Two-Parameter Martingale Differences With Application to Stationary Random Fields .....	HUANG Da-wei ( 413 )
Bouligand Dimensions of Some Fractals Represented by Lacunary or Random Lacunary Trigonometric Series .....	SUN Dao-chun et al. ( 426 )
The Necessary and Sufficient Condition of H-Graph and the Optimizing Models of Minimum H-Circuit .....	XU Ya-ping et al. ( 513 )
Strong Approximations for the Open Queueing Network in Heavy Traffic .....	ZHANG Han-qin et al. ( 521 )
Langlands Classifications of Reductive Groups .....	HOU Zi-xin ( 536 )
Holomorphic and Differentiable Properties of the $C_0$ -Semigroup Associated With the Euler-Bernoulli Beam Equations With Structural Damping .....	HUANG Fa-lun et al. ( 547 )
Sub-Laplacians on a Class of Homogeneous Groups .....	SUN Li-min ( 561 )
A Complete Solution for Weak Convergence of Heavily Trimmed Sums .....	CHENG Shi-hong ( 641 )
Estimation Theory of a Class of Semiparametric Regression Models .....	HONG Sheng-yan ( 657 )
How Small Are the Increments of Partial Sums of Non-IID Random Variables? .....	SHAO Qi-man ( 675 )
Parallel Iterative Domain Decomposition Method for Elliptic Equation —— Many Subdomains Case .....	ZHANG Sheng et al. ( 690 )
Foliations on CR Manifold .....	HAN Zu-hong ( 701 )
Isomorphisms Between Endomorphism Rings of Free Modules .....	XU Yong-hua ( 769 )
Neumann Problem for Overdetermined System Related With Almost complex Structure .....	ZHANG Jir-hao ( 780 )
Structure and Characteristics of Left Clifford Semigroups .....	ZHU Pin-yu et al. ( 791 )
Three-Point Transition Functions for Two-Parameter Markov Chains and Their Four Systems of Partial Differential Equations. ....	GUO Jun-yi et al. ( 806 )
Involution Number Sequence and Dimensions of the Components in Fixed Point Set of an Involution II .....	YANG Hua-jian et al. ( 819 )
Pseudo-Differential Operators and Derivatives on Locally Compact Vilenkin Groups .....	SU Wei-yi ( 826 )
Manifolds With Constant Codimensional Involution .....	YUE Qing-qi ( 837 )
A New Explicit Bound in Landau's Theorem .....	LI Zhong ( 897 )
Interpolating Sequences for $A^\infty(\varphi)$ -Functions .....	XIAO Jie ( 907 )

Construction of Indecomposable Positive Definite Unimodular Hermitian Forms .....	ZHU Fu-zu ( 917 )
Hofer-Zehnder Capacity and Its Application in $M \times R^{2n}$ .....	MA Ren-yi ( 931 )
Stability, Boundedness, Dissipation of Partial Variables for Nonlinear Systems With Separating Variables .....	LIAO Xiao-xin ( 1025 )
Torsion in Homotopy Groups of CW Complexes .....	SHEN Wen-huai ( 1040 )
New Forms of the Darboux Transformation for KdV and KP Equation .....	LI Yi-shen ( 1050 )
Ruelle's Inequality for the Entropy of Random Diffeomorphisms .....	GONG Guang-lu et al. ( 1056 )
Using Measuring Method to Find Area of Enclosed Plane Region and Volume of Enclosed Space Region .....	YE Yi-min et al. ( 1153 )
Infinite Dimensional Kolmogorov Width and Optimal Interpolation on Sobolev-Wiener Space .....	LIU Yong-ping et al. ( 1162 )
A New Mean Value Formula of Dirichlet's $L$ -Functions .....	ZHANG Wen-peng ( 1173 )
Drasin's Problems and Mues' Conjecture .....	YANG Le et al. ( 1180 )
ad-Nilpotent Elements, Quasi-nilpotent Elements and Invariant Filtrations of Infinite Dimensional Lie Algebras of Cartan Type .....	JIN Ning ( 1191 )
Curvatures on a Class of Reinhardt Domains .....	YIN Wei-ping et al. ( 1281 )
On the Koschorke Normal Bordism Sequence .....	LI Bang-he ( 1294 )
Existence of Positive Solutions for Neutral Differential Equations .....	ZHANG Bing-gen et al. ( 1306 )
Set-Valued Derivatives of One-Dimensional Distributions .....	LI Bang-he et al. ( 1314 )
Proof of One Conjecture of R. S. Singh: Discrete Case .....	TAO Bo ( 1409 )
Global Smooth Solution for Nonlinear Evolution Equation of Hirota Type .....	GUO Bo-ling et al. ( 1425 )
Intrinsic Topology and Refinement of Hutton Unit Interval .....	WANG Guo-jun et al. ( 1434 )
On Borel Removable Sets of Entire and Meromorphic Functions .....	WU Sheng-jian ( 1444 )

## Physics

The True Harmonic Modes in a Cubic Structure System .....	LI Jing-de et al. ( 70 )
---	--------------------------

Experimental Investigation on Ordered and Chaotic Phenomena of Vortex Shedding in the Wake Flow Behind a Two-Dimensional Circular Cylinder .....	WEI Zhong-lei et al. ( 81 )
Variation of the Inner Electronic Cloud in a Two-Electron Atomic System .....	BAO Cheng-guang ( 91 )
Investigation on Gas Discharge of Proportional and Limited Proportional Modes .....	TANG Xiao-wei ( 100 )
Chemical Potential-Density Equations of State in Finite-Asymmetric Nuclear Matter With Skyrme Interactions .....	ZHENG Guo-tong et al. ( 169 )
Global Analytical Structure of the Mandelbrot Set and Its Generalization .....	HUANG Yong-nian ( 175 )
The Action of Harmonic Condition on the Study of Gravitational Waves .....	LIU Jun ( 186 )
Group-theoretical Formalism of Quantum Mechanics and Classical-Quantum Correspondence .....	GU Yan ( 200 )
Vertical Displacement Instability of Elongated Plasma in Tokamak and Its Dynamic Stabilization .....	DU Tao et al. ( 292 )
$d^8(C_{5v}^*)$ -EPR Theory and the Optical, Magnetic Properties of $Ni^{2+}: CsMgCl_3$ .....	WU Ping-feng et al. ( 298 )
Site-Bond Percolation and Phase Transition in Diluted Magnetic System .....	ZHENG Mao-sheng et al. ( 311 )
The Newman-Penrose Formalism of the Coupled $SU(5)$ Einstein-Yang-Mills-Higgs Field Equations .....	YU Hong-wei et al. ( 317 )
An EPR Study on Proton-Implanted Defect in FZ-Silicon .....	WU En et al. ( 437 )
Sound Propagation and Inversion in Bubbly Curtains .....	QIAN Zu-wen et al. ( 443 )
Traces of Nonsmooth Functions on Polyhedral Domains .....	DING Hua ( 452 )
Forced Solitary Waves in a Parametrically Excited Circular Tank .....	WANG Ben-ren et al. ( 570 )
KdV-Burgers Equation Modelling of Turbulence .....	LIU Shi-da et al. ( 576 )
Calculation of Huang-Rhys Parameters and Theoretical Analysis of Integrated Intensities and Profile of $d-d$ Optical Spectra in Non-Condon Approximation .....	LIU Shi-yu et al. ( 587 )
Geometric Description and Computational Method for Bifurcation .....	JI Hai-bo et al. ( 597 )
Growth of Zero-Mean-Shear Turbulent-Mixed Layer With Suspended Particles in a Two-Layer Fluid System .....	E Xue-quan et al. ( 709 )
Experimental Study on Oscillatory Thermocapillary Convection .....	CAO Zhong-hua et al. ( 725 )
Nonlinear Stability of Symmetrically Laminated Cylindrically Orthotropic Shallow Spherical Shells Including Transverse Shear .....	LIU Ren-huai ( 734 )

NMR Studies of Vitrain, Pyridin-Soluble and -Insoluble Solids .....	HU Jian-zhi et al. ( 747 )
Raman Magnetic Resonance in $AX_n$ Systems .....	YANG Dai-wen et al. ( 842 )
The Crystal Structure, electronic Structure and Superconductivity of $Bi_2Sr_2Ca_{1-x}Y_xCu_2O_{8+y}$ .....	WANG Nan-lin et al. ( 853 )
Necessary and Sufficient Boundary Integral Equations for Plane Harmonic Functions .....	HU Hai-chang ( 861 )
On the Index of Eigenvalues of Transport Operator in Inhomogeneous Media .....	YAO Ai-xiang et al. ( 870 )
$q$ -Deformed Boson Representations of Universal Enveloping Algebras in the Case Where $q$ Is a Root of Unity .....	SUN Chang-pu et al. ( 944 )
Computer-Coupled Thermodynamic and Phase Diagram Analysis of the Alkali and Yttrium Chloride Systems .....	QIAO Zhi-yu et al. ( 957 )
Multiple Scattering Cluster Theory for X-ray Absorption Fine Structure .....	TANG Jing-chang et al. ( 965 )
Domain Decomposition Hybrid Method for Numerical Simulation of Bluff Body Flows — Theoretical Model and Application .....	LING Guo-can et al. ( 977 )
The Series Solution for Korteweg-de Vries-Burgers Equation .....	XIN Xiao-kang et al. (1066)
Application of the Density Wave Theory of Atomic Configuration of the Oxygen Ordering on Basal Plane in $YBa_2Cu_3O_{7-x}$ Superconductor .....	GUI Hong et al. (1078)
Diffusion Analogy and Shock Capturing for Solving Aerodynamic Equations .....	MA Yan-wen et al. (1090)
Free Surface Oscillation of Thermocapillary Convection in Liquid Bridge of Half-floating-Zone .....	HU Wen-rui et al. (1101)
The Transfer of Low Frequency Signal by the Nonneutral Electron Plasma in EV Device .....	ZHENG Shao-bai et al. (1201)
Single Electron Capture Into Excited States in Collision Between $O^{5+}$ and He .....	YANG Feng et al. (1210)
A DNP Spectrometer at 1.94 T Magnetic Field .....	LI Li-yun et al. (1214)
Determination of Three-Dimensional Structure of Codeine by NMR Molecular Graphics Techniques .....	MAO Shi-zhen et al. (1222)
Domain Average SCM and Constitutive Modelling of Polycrystalline Aggregates .....	ZHONG Zheng et al. (1230)
Character of Simplified Navier-Stokes (SNS) Equations Near Separation Point for Two-Dimensional Laminar Flow Over a Flat Plate .....	TIAN Ji-wei et al. (1242)
The Crystal Structure and the Room Temperature Section of Ternary Phase Diagram in the System Gd-Fe-Ti .....	TIAN Jing-hua et al. (1327)
Low Temperature Internal Friction Spectrum of Nano $ZrO_2$ Solids .....	XIE Cun-yi et al. (1336)

Exact Solutions for Thick Laminated Shells.....	FAN Jia-rang et al.	(1343)
Quantum Double Construction of New Solutions to the Quantum Yang-Baxter Equation .....	LIU Xufeng et al.	(1356)
Spin Determination and Spectrum Calculation of Superdeformed Band in $^{152}\text{Dy}$ .....	MENG Jie et al.	(1456)
Electronic Structure of Grain Boundary in Transition Metal Ni.....	WANG Chong-yu et al.	(1466)
Potential Energy Model for Turbulent Entrainment Across Density Interface in a Linearly Stratified Fluid .....	E Xue-quan et al.	(1475)
Weakly Nonlinear Theory of Hydrodynamic Stability.....	ZHOU Heng et al.	(1486)

### Astronomy

Fractal Dimensions in the Large-Scale Distribution of IRAS Galaxies .....	XIA Xiao-yang et al.	(326)
Dynamical Problems in $H_\alpha$ Flare Loops on Solar Disc .....	XU Ao-ao et al.	(463)
Classification for Pulsars .....	LI Zong-yun et al.	(758)
Wormholes of Complex Scalar Fields at Finite Temperature.....	SHEN You-gen et al.	(991)
A Relation Between the Apparent Velocity and the Spectral Power of Superluminal Radio Sources .....	WU Sheng-yin et al.	(1254)
Thermal Instability and the Formation Model of Globular Clusters From Merging Dwarf Galaxies .....	MA Er et al.	(1364)

### Technological Sciences

The Interaction of EM Wave With Dielectric Bodies		
— Hybrid Equation Finite Element Method .....	WANG Gao-feng et al.	(110)
Mathematic Models of Thinning Pattern for Non-sphere Superplastic Free Bulging (I) .....	SONG Yu-quan et al.	(122)
Similarity Analysis of Lie Group Method Applied to Solving the Partial Differential Equation of Orthogonal Anisotropic Plates .....	CAO Da-wei et al.	(211)
Molecular Dynamics Studies of Bond-Orientational Order in Molten and Quenched-Vitreous State of LiCl .....	CHENG Zhao-nian et al.	(223)
Two-Dimensional Thermal Radiative Transfer From a Layer of Spatially Inhomogeneous Random Medium .....	JIN Ya-qiu	(235)
Models of Geometric Profile for Non-sphere Superplastic Free Bulging (II) .....	SONG Yu-quan et al.	(247)
Model for Rapidly Moving Boundaries .....	MAO Wei-min	(336)
Pseudostream Function Formulation		
— A Method of Solving Three-Dimensional Aerodynamic Analysis and Design Problems in Turbomachinery .....	XU Jian-zhong et al.	(344)
Transmission Mechanism of Fiber-optic Faceplate (II) .....	WEN Hua et al.	(356)
Optimization Problems in Extension Matrixes .....	WU Xin-dong	(363)
Analogy Model and Analogy Correspondence .....	YI Bo et al.	(374)
Nonlinear Vibration of Rectangular Sandwich Plates.....	LIU Ren-huai et al.	(472)



New 10 GW Tunable Nd-Glass Laser System With Narrowed Linewidth.....	WU Hong-xing et al. ( 487 )
Relations Between Electric Field and Extending of Local Arcs on Contaminated Insulator Surface.....	SUN Cai-xin et al. ( 496 )
Synergistic Action Among Hydrogen, Stress and Corrosion Medium on Austenitic Stainless Steel .....	QIAO Lijie et al. ( 505 )
Mechanical Behaviour and Interfacial Performance of Steel Fiber Reinforced Silica Fume High-Strength Concrete .....	SUN Wei et al. ( 607 )
Surveying Into the Limiting Breakdown Strength and the Figure of Merit of Strongly Electronegative Gases .....	LI Zheng-ying ( 618 )
Passing-Through and Oscillating About Each Other of a Pair of Solitary Waves in a Rectangular Water Trough .....	NI Wan-sun et al. ( 626 )
Graphical Representation of the Sub-solidus Phase Relationships in the Reciprocal Salt System Si, Al, Y/N, O .....	SUN Wei-ying et al. ( 877 )
The Canonical Form of Uncontrollable Nonlinear Control Systems .....	LIU Xiao-ping et al. ( 889 )
Miscibility and Morphology of Blends of AS Random Copolymer and Graft Copolymer AS-g-PBD .....	YE Jin-yong et al. ( 997 )
Hydraulic Characteristics of Open Channel Flows Over Rough Beds.....	DONG Zeng-nan et al. (1007)
Crystal Nucleation and Formation of Bulk Metallic Glass in Undercooled Pd <sub>40</sub> Ni <sub>40</sub> P <sub>20</sub> Melt Under High Pressure .....	WANG Wen-kui et al. (1017)
The Three States of Unseparating Zone in Ultrasonic Vibration Cutting .....	WANG Lijiang (1110)
Topological Conditions for Fault Diagnosability at Subnetwork-level .....	HUANG Dong-quan et al. (1117)
Calculation of High-Pressure Vapor-liquid Equilibria .....	LUO Rui-xian et al. (1126)
Application of a C-13 NMR Topological Model to the Structure Elucidation of Organic Compounds .....	YUAN Shen-gang et al. (1136)
Heating and Sintering Characteristics of Y-TZP and Y-TZP/Al <sub>2</sub> O <sub>3</sub> by Microwave.....	SHI Jian-lin et al. (1144)
Nucleation and Growth Activation Energies During Crystallization of Amorphous Alloys (I) .....	LU Ke et al. (1266)
Nucleation and Growth Activation Energies During Crystallization of Amorphous Alloys (II).....	LU Ke et al. (1273)
A Computer Model of Derivative Method for Point Source Gravity Waves in Atmosphere .....	ZHUANG Hongchun et al. (1374)
The Mechanical Fields for Superplastic Free Bulging (III) .....	SONG Yu-quan et al. (1388)
The Vapor Epitaxial Growth of Single Crystal Diamond Film .....	ZHANG Zhan et al. (1402)
Infinite-Length Roots of Median Filters .....	ZHOU Xing-wei et al. (1496)

Experimental Investigation of Double-pass Amplification of X-ray Laser in Neon-Like Germanium.....	
.....	<i>CHUNYU Shu-tai et al.</i> (1509)
On the Completed Database Semantics for Negation .....	
.....	<i>SHEN Yi-dong et al.</i> (1516)



